



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,777	07/28/2006	Gregory P. Crawford	904.0139.U1(US)	2453
29683 7590 08/01/2008 HARRINGTON & SMITH, PC 4 RESEARCH DRIVE SHELTON, CT 06484-6212				
EXAMINER BERHANU, ETSUB D				
ART UNIT 3768		PAPER NUMBER		
MAIL DATE 08/01/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/587,777

Applicant(s)

CRAWFORD ET AL.

Examiner

ETSUB D. BERHANU

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 7/28/06 1/25/08 3/11/08
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Objections

1. Claims 4-19 are objected to because of the following informalities: the term “substrate in the last line of claim 4 should be amended to read - - substrates - -; the phrase “the pitch axis” in the last line of claim 17 should be amended to read - - a pitch axis - - in order to provide proper antecedent basis; the term “planar” in lines 2 and 4 of claim 4, line 3 of claim 7 and line 2 of claim 10 should be amended to read - - planar - -. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 15 and 17, 18 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 15 recites the limitation “the stack” in line 2. There is insufficient antecedent basis for this recitation in the claim. In reciting “The device of claim 14 forming...”, claim 17 appears to provide a method step and therefore fails to provide a structural limitation to the device claim of claim 14. It also appears that claims 17 and 18 are intended to be dependent upon claim 16 and not claims 14 and 15. It is unclear as to which claim claim 20 is dependent upon.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 3768

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Caro'003 (cited by Applicant).

Figure 1 of Caro'003 discloses a non-invasive spectrometric device for assessing the level of hemoglobin in mammalian tissue (col. 4, line 38-47), the device comprising a wavelength filter means for transmitting or reflecting wavelengths of light, light intensity sensor means arranged and disposed to measure the intensity of the wavelengths transmitted or reflected by the wavelength filter means and generate an electrical signal therefrom, output processing means connected to the light intensity sensor means to receive and process the output therefrom and display means connected to the output processing means to display the output (col. 5, lines 26-50), wherein the light intensity sensor means is arranged and disposed such that the wavelengths of light are transmitted through the wavelength filter means into the light intensity sensor means and also reflected from the wavelength filter means into the light intensity sensor means (see description of Figures 1, 2 and 5), wherein the light intensity sensor means is selected from the group consisting of an array of CCD and a photodiode (col. 10, lines 57-64). Caro'003 also discloses that solid state lasers or crystal lasers are capable of being used as the wavelength filter means (col. 9, lines 51-57).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3768

7. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caro'003, as applied to claim 1, further in view of Johnson et al.'826 (cited by Applicant).

Caro'003 discloses all the elements of the current invention, as discussed in paragraph 5 above, except for the wavelength filter means comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in power-providing communication with the substrates. Johnson et al.'826 teaches a crystal laser comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in electrical communication with the substrates wherein the substrates are electrically conducting substrates and the light-wavelength modulating material comprises deformed helix ferroelectric liquid crystals electrically tuned to exhibit predetermined wavelength selection properties and wherein the molecules in the layers of the deformed helix ferroelectric liquid crystals are aligned perpendicular to the surfaces of the planar substrates (col. 4, line 61 – col. 5, line 8, col. 6, line 62 – col. 7, line 2, col. 7, lines 14-25, col. 19, lines 32-41 and see descriptions of Figures 2 and 6). It would have been within the skill of the art to implement the crystal laser of Johnson et al.'826 as the wavelength filtering means of Caro'003 since Caro'003 discloses that crystal lasers are capable of being used as the wavelength filtering means and Johnson et al.'826 teaches a crystal laser capable of being used in the device of Caro'003.

8. Claims 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caro'003, as applied to claim 1, further in view of Cole et al.'970 (cited by Applicant).

Caro'003 discloses all the elements of the current invention, as discussed in paragraph 5 above, except for the wavelength filter means comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in power-providing communication with

Art Unit: 3768

the substrates. Figure 2 of Cole et al.'970 teaches a crystal laser comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in thermal communication with one of the pair of substrates so as to create a temperature change in the wavelength modulating material (see ABSTRACT, SUMMARY and description of Figure 2). It is noted that while Cole et al.'970 does not teach the specifics of the power source, it is well known in the art to implement a resistive heater as an element capable of providing heat to a substance as required in the device of Cole et al.'970. It would have been within the skill of the art to implement the crystal laser of Cole et al.'970 as the wavelength filtering means of Caro'003 since Caro'003 discloses that crystal lasers are capable of being used as the wavelength filtering means and Cole et al.'970 teaches a crystal laser capable of being used in the device of Caro'003.

9. Claims 4, 5 and 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caro'003, as applied to claim 1, further in view of Domash et al.'573 (cited by Applicant).

Caro'003 discloses all the elements of the current invention, as discussed in paragraph 5 above, except for the wavelength filter means comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in power-providing communication with the substrates. Figures 1A, 1B, 2A and 2B of Domash et al.'573 teach a crystal laser comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in electrical communication with the substrates wherein the substrates are electrically conducting substrates and wherein the light-wavelength modulating material comprises a layer of holographic polymer dispersed liquid crystals, one layer of holographic polymer dispersed liquid crystals arranged between two parallel-opposed electrically conducting substrate layers and wherein the holographic polymer dispersed liquid crystals have an index of refraction variable in

Art Unit: 3768

response to an applied electric field (see ABSTRACT, description of Figures 1A, 1B, 2A, 2B, col. 4, line 12 – col. 5, line 3 and col. 7, lines 8-36). It would have been within the skill of the art to implement the crystal laser of Domash et al.'573 as the wavelength filtering means of Caro'003 since Caro'003 discloses that crystal lasers are capable of being used as the wavelength filtering means and Domash et al.'573 teaches a crystal laser capable of being used in the device of Caro'003.

10. Claims 4, 5 and 16-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Caro'003, as applied to claim 1, further in view of So et al.'694 (cited by Applicant).

Caro'003 discloses all the elements of the current invention, as discussed in paragraph 5 above, except for the wavelength filter means comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in power-providing communication with the substrates. Figures 1A-E of So et al.'694 teach a crystal layer comprising at least one pair of planar substrates in parallel-opposed relation, at least one layer of light-wavelength modulating material disposed between the pair of planar substrates and a power source in communication with the substrate wherein the substrates are electrically conducting substrates and the light-wavelength modulating material comprises at least one layer of cholesteric liquid crystals stacked in alternating, superposed relation to a plurality of substrate levels, and wherein a power source produces electrical energy perpendicular to a pitch axis of the cholesteric liquid crystal layers (see ABSTRACT, description of Figures 1A-E and page 1, section [0007] - page 2, section [0012]). It is noted that no patentable weight was given to the limitation in claim 19 regarding "wherein the one layer of CLC is subjected to an in-plane electric field to produce different pitch sizes as the electric field is increased" as this is a method step and not a structural limit to the current invention. It would have been within the skill of the art to implement the crystal laser of So et al.'694 as the wavelength filtering means of Caro'003 since Caro'003 discloses that crystal lasers

Art Unit: 3768

are capable of being used as the wavelength filtering means and So et al.'694 teaches a crystal laser capable of being used in the device of Caro'003.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ETSUB D. BERHANU whose telephone number is (571)272-6563. The examiner can normally be reached on Monday - Friday (7:00 - 3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric F Winakur/
Primary Examiner, Art Unit 3768

EDB